kind of interference, and that basic common sense should prevail.

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Accepted for publication 15 February 2001

Lichen sclerosus of the glans is significantly associated with penile carcinoma

EDITOR,—We read with interest the article by Riddel *et al* on 66 men with penile lichen sclerosus (PLS) attending a department of genitourinary medicine.[1] In this study, the authors found no cases of malignancy.

We have previously reported a retrospective study on the incidence of cancer on 86 cases of PLS retrieved from our histopathological files over a 10 year period (1987–97).[2] In that study, five cases showed malignant transformation—namely, squamous cell carcinoma (SCC) (three cases), in situ carcinoma (one case), and verrucous carcinoma (one case).

Since that report, we decided to interview all PLS patients in order to rule out any further malignancy that occurred over time. Of 86 patients identified, 60 were evaluated at our clinic. Among these, we found three additional patients treated with partial penectomy for invasive SCC at other institutions. Their medical records were obtained together with paraffin embedded tissue samples to perform polymerase chain reaction (PCR) for human papillomavirus (HPV) testing. Clinical and laboratory information for these cases, together with previously reported patients, are summarised in table 1.

In this current study, eight (9.3%) out of 86 patients with PLS developed an epithelial cancer. Data analysis using the *t* test confirmed in our series a statistically significant risk of malignant degeneration ($p < 0.05$).

Clinically, the most common presentation of epithelial cancer arising with PLS was that of an infiltrated or ulcerated plaque followed, in decreasing order of frequency, by a nodular lesion or verrucous papules. The glans was the most commonly affected area. The average age of onset of PLS was 45 years, and that of development of cancer was 62 years. The average lag time from onset of PLS to cancer development was 18 years (range 10–34 years). This long latency time might explain the paucity of cases, mostly anecdotal, reported in the literature in the past 22 years (approximately 20)[2–5] compared with our study, in which a long follow up disclosed 9.3% malignant degeneration in a series of 86 patients.

Also, the latency time was shorter in the HPV positive patients (average 15 years) compared with the HPV negative patients (average 23 years). The role of HPV in the pathogenesis of penile cancer is not fully understood. Some HPVs, such as type 16 and 18, are likely to play a part, but not all penile carcinomas are HPV positive, as shown in our study. Also, PLS is not commonly associated with HPV infection.[5] In our study we found five patients positive for HPV 16 infection, and this may have hastened the progression towards cancer resulting in a shorter lag time. However, routine HPV testing on larger series is necessary in order to draw any definitive conclusion.

Similarly to vulvar lichen sclerosus, which has been observed to undergo malignant degeneration in 3–6% of women,[6] a likely malignant evolution of PLS should be considered. Careful and systematic histopathological evaluation of any ulcerated or indurated plaques developing within PLS is therefore strongly recommended. The association between PLS and cancer may very well be underestimated and there is a need for further investigation that includes long term follow up and routine PCR analysis for HPV infection.

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Accepted for publication 22 March 2001

Third trimester screening or safer sex to prevent mother to child transmission of HIV

EDITOR,—Since 1992 Department of Health guidelines have recommended that HIV screening be offered to all pregnant women in areas of high seroprevalence[1] but implementation and uptake has been poor. In 1998 an intercollegiate working party recommended that HIV testing be integrated with antenatal screening for other infections and that the test should be offered and recommended to all pregnant women in high seroprevalence areas.[2] In 1999 the Department of Health extended these recommendations to all regions aiming to reduce neonatal HIV infection by 80% by 2002.[3] We present the case of an infant with symptomatic HIV infection, whose mother's antenatal HIV test was negative and discuss the implications.

A 3 month old female, born at term by spontaneous vaginal delivery and breastfed, presented with a 1 week history of increasing respiratory difficulty. Following further deterioration, she was transferred to St Mary's Hospital and ventilated. *Pneumocystis carinii* pneumonia (PCP) was diagnosed on bronchoalveolar lavage. Anti-HIV antibodies were present in serum and HIV infection was confirmed by the detection of HIV-DNA in peripheral blood mononuclear cells (PBMC) by PCR amplification. HIV-1 infection was confirmed in both parents. Her asymptomatic mother had received antenatal care from the 12th week of gestation and was HIV seronegative at 29 weeks. To investigate a

Table 1 Clinical and histopathological features of eight cases of carcinoma on penile lichen sclerosus

Patient No	*Age of onset of PLS (years)*	*Age of onset of Ca (years)*	*Lag time (years)*	*Site*	*Clinical aspect of malignancy on PLS*	*Histopathology*	*PCR testing for HPV*
1*	41	62	21	glans	fungating keratotic nodule with a white-yellowish hue	SCC well differentiated	negative
2*	36	59	23	glans	slightly elevated verrucous papules	SCC well differentiated	HPV 16
3*	41	55	14	glans, coronary sulcus	multiple erythematous, indurated, and ulcerated plaques	SCC well differentiated	HPV 16
4*	39	49	10	glans, coronary sulcus, inner aspect of the foreskin	sharply circumscribed, erythematous, eroded, oozing, and slightly infiltrated plaque	In situ carcinoma	HPV 16
5*	29	47	18	glans	exophytic verrucous whitish nodule	VC	HPV 16
6	75	85	10	glans	sharply circumscribed, erythematous, and ulcerated plaque	SCC well differentiated	HPV 16
7	66	70	15	glans	exophytic whitish and indurated plaque	SCC undifferentiated	negative
8	33	67	34	glans, coronary sulcus	sharply circumscribed, erythematous, eroded, crusted, and indurated plaque	SCC undifferentiated	negative

*Previously reported cases.[1]
PLS = penile lichen sclerosus; Ca = carcinoma; PCR = polymerase chain reaction; HPV = human papillomavirus; SCC = squamous cell carcinoma; VC = verrucous carcinoma.

Table 1 Peripartum HIV test results

	Time (in weeks of gestation)			
	1 T = 12 weeks ("Booking blood")	*2 T = 29 weeks*	*3 T = 33 weeks ("Booking blood")*	*4 T = 13 weeks post partum (child presents)*
Hospital where blood taken	X Blood was stored and retrospectively tested	Y Index antenatal test (serum not available for repeat retrospective testing)	Y Blood was stored and retrospectively tested	St Mary's Postnatal test. Blood stored
HIV antibody screening tests	Clear negative i Detect-HIV[α] OD=−0.030, CO=0.144 ii Wellcozyme HIV Recombinant[β] OD=1.179, CO=0.696	Clear negative i Abbot Axsym HIV 1/2 gO[γ] S/CO=0.42	Weak positive i Murex HIV 1+2[δ] OD=0.938, CO=0.252 ii Wellcozyme HIV Recombinant[β] OD=0.486, CO=0.839 iii Serodia HIV-1/2[ε] HIV 1:1/256, HIV 2: <1/32	Strong positive i Abbot Axsym HIV 1/2 gO[γ] OD=14.86, CO=1.00 ii Detect-HIV[α] OD=2.050, CO=0.152 iii Wellcozyme HIV Recombinant[β] OD=0.062, CO=0.532
HIV specific antibody tests (CPHL in-house EIAs)	Clear negatives, (OD/CO) HIV IgG=0.49, IgM=0.36, IgA=0.44	—	Strong positives, (OD/CO) HIV IgG=12.34, IgM=10.94, IgA=5.28	Strong positives for IgG and IgA; weak positive IgM (OD/CO) HIV IgG=15.41, IgM=3.14, IgA=4.18. *Note decreasing values for IgM and IgA compared to previous
HIV western blot[ζ]	—	—	—	HIV1 gag p17+, p24+++, p55+; pol p31++, p51++, p66+++; env gp41−, gp120+, gp160+++ HIV2 gp36−
HIV RNA (copies/ml)	Not detected (< Limit of detection) Cobas Amplicor HIV-1 Monitor v1.5[η]	—	—	41377 Quantiplex HIV-1 RNA 3.0[θ] 82400 Cobas Amplicor HIV-1 Monitor v1.5[η]

[α]Enzyme immunoassay (EIA) for detection of antibody to HIV-1 and 2. Biochem Immunosystems Inc, Montreal, Quebec, Canada.
[β]EIA for detection of antibody to HIV-1 (Abbott Murex) Murex Biotech Ltd, Dartford, UK.
[γ]Microparticle EIA for qualitative detection of antibodies to HIV-1 and 2. Abbott Laboratories, IL, USA.
[δ]EIA for detection of antibodies to HIV-1 and 2 (Abbott Murex) Murex Biotech Ltd, Dartford, UK.
[ε]Passive particle agglutination test for detection of antibodies to HIV-1 and 2 Fujirebio Inc, Tokyo, Japan.
[ζ]Western blot for detection of antibodies to HIV antigens. Genelabs Diagnostics, Singapore.
[η]Polymerase chain reaction (PCR) for quantitative detection of HIV-1 RNA. Roche Diagnostics, Branchburg, NJ, USA.
[θ]Signal amplification nucleic acid probe assay for quantitative detection of HIV-1 RNA. Chiron Corp Emeryville, CA, USA.

possible false negative result, other sera stored at various times were retrieved and tested. The results, which show seroconversion late in pregnancy, are summarised in table 1.

The HIV antibody test is usually performed at the booking visit with other routine antenatal screens. This allows the parents time to adjust to the diagnosis before delivery, to consider family planning issues and interventions to minimise the risk of mother to child transmission. In addition, mothers with advanced immunosuppression benefit from antiretroviral therapy.

Although rarely reported, an HIV seronegative mother whose partner has undiagnosed HIV infection is at continued risk of infection. This may become more common in the United Kingdom as heterosexual intercourse is now the most common risk for HIV infection in newly diagnosed patients.[4] Primary HIV infection during gestation or lactation is associated with an increased risk of mother to child transmission.[5]

Repeat antenatal screening late in pregnancy, as is recommended for syphilis in the United States,[6] would identify some primary HIV infections during gestation. However, if maternal infection is not prevented transmission during lactation would remain a risk and there would be significant logistic and cost implications. The extension of testing for HIV (and other infections) to the partners of pregnant women is appealing as both maternal and infant infections could be prevented (and the infected male may benefit from earlier diagnosis and treatment) but would require a fundamental change to antenatal care. A practical approach, which may prevent maternal and neonatal infection (but not identify the infected male) is to use the opportunity, when giving negative HIV, hepatitis B, and syphilis results to the mother, to discuss the sexual transmission of infections, to emphasise that the negative results cannot be extrapolated to the partner, and advocate safer sex which is commonly abandoned following conception.

Contributors: PG obtained samples and results, monitored virology and immunology, wrote and amended paper; RW monitored virology and immunology, amendments to paper; HL was involved in clinical management of child, amendments to paper; JP monitored PHLS Colindale tests, amendments to paper; GT was involved in clinical management of mother, helped write and amend paper.

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Accepted for publication 3 April 2001

Economic advantages of ligase chain reaction for diagnosis of genital *Chlamydia trachomatis* infection in GUM clinic attenders

EDITOR,—Genital infection with *Chlamydia trachomatis* is highly prevalent and recognised as a major threat to public health.

There is now a wealth of evidence to demonstrate the superiority of DNA amplification techniques over antigen detection and culture.[1] Only one large study has directly compared ligase chain reaction (LCR) with enzyme immunoassay (EIA) on identical clinical material[2] and no studies have analysed the health economic impact of LCR in a genitourinary medicine (GUM) clinic population.

We studied the diagnostic effectiveness and cost of LCR compared with EIA.

All GUM attendees undergoing sexual health screening were offered the opportunity to participate. Men presenting with dysuria or urethral discharge were defined as symptomatic. Swabs were collected in a prerandomised order from the cervix in female patients and 4–5 cm proximal to the urethral meatus in male patients. Urethral specimens in male patients were evaluated for evidence of urethritis (defined by ≥4 polymorphs per high powered field).

EIA was performed using a standard immunoassay technique (Organon Chlamydia-Tek),[1] with confirmation of reactive tests by microdot DIF.[3] LCR (LCX system, Abbott Laboratories) was also performed on every specimen.[4] Specimens